

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An image processing apparatus capable of correcting the gradation of image data, comprising:

brightness data separation means for separating brightness data and color data from the image data;

area discrimination means for discriminating areas to which the image data belong and outputting discrimination results;

coefficient calculation means for outputting correction coefficients to be used for correction of pixel values of the ~~image~~ brightness data based on the discrimination results; and

correction means for correcting the pixel values of the ~~image~~ brightness data and color data with the correction coefficients.

2. (currently amended) An image processing apparatus according to claim 1, wherein said area discrimination means detects a characteristic amount indicative of a characteristic of a predetermined range neighboring to each of the ~~image~~ brightness data and outputting the discrimination ~~result~~ results, and said coefficient calculation means outputs the correction coefficients based on the characteristic ~~amounts~~ amount received from said area discrimination means.

3. (currently amended) An image processing apparatus according to claim 1, wherein said area discrimination means includes a low-pass filter for extracting a low frequency component of each of the ~~image~~ brightness data, and said coefficient calculation means produces the correction coefficients in response to the low frequency ~~components~~ component received from said low-pass filter.

4. (currently amended) An image processing apparatus according to claim 1, wherein said area discrimination means includes quantization means for quantizing the ~~image~~ brightness data, and a low-pass filter for extracting a low frequency component from each of the ~~image~~ brightness data quantized by said quantization means, and said coefficient calculation means produces the correction coefficients in response to the low frequency ~~components~~ component received from said low-pass filter.

5. (currently amended) An image processing apparatus according to claim 1, wherein said area discrimination means includes a plurality of low-pass filters for individually extracting low frequency components of each of the ~~image~~ brightness data, and signal composition means for producing single composite signals based on the low frequency components outputted from said low-pass filters, and said coefficient calculation means produces the correction coefficients based on the composite signals received from said signal composition means.

6. (original) An image processing apparatus according to claim 5, wherein said signal composition means weighted averages the low frequency components outputted from said low-pass filters to produce the composite signals.

7. (original) An image processing apparatus according to claim 5, wherein said signal composition means weighted adds the low frequency components outputted from said low-pass filters with weighting coefficients set in advance to produce the composite signals.

8. (currently amended) An image processing apparatus according to claim 1, wherein said area discrimination means includes a plurality of low-pass filters for individually extracting low frequency components of each of the ~~image~~ brightness data, and said coefficient calculation means includes partial coefficient calculation means for producing coefficients for correction from the low frequency components outputted from said low-pass filters, and coefficient composition means for producing the correction coefficients based on the coefficients for correction.

9. (currently amended) An image processing apparatus according to claim 8, wherein said coefficient composition means weighted-~~averages~~ adds the coefficients for correction to produce the correction coefficients.

10. (original) An image processing apparatus according to claim 8, wherein said coefficient composition means weighted adds the coefficients for correction with weighting coefficients set in advance to produce the correction coefficients.

11. (currently amended) An image processing apparatus according to claim 1, wherein said correction means multiplies the pixel values of the ~~image~~brightness data and color data by the correction coefficients to correct the pixel values of the image data.

12. (currently amended) An image processing apparatus according to claim 1, wherein the number of bits of the ~~image~~brightness data outputted from said correction means is smaller than the number of bits of the image data ~~inputted to said image processing apparatus~~.

13. (original) An image processing apparatus according to claim 1, wherein the image data are data obtained by sampling a signal, wherein an amplitude modulated color signal is sequentially superposed on a brightness signal, with a predetermined frequency.

14. (canceled)

15. (canceled)

16. (currently amended) An image processing method for correcting ~~the~~ gradation of image data, comprising:

separating brightness data and color data from the image data;

~~an area discrimination step of~~ discriminating areas to which the image data belong and outputting discrimination results;

~~a coefficient calculation step of~~ outputting correction coefficients to be used for correction of pixel values of the ~~image~~brightness data based on the discrimination results; and

~~a correction step of correcting the pixel values of the image brightness data and color~~
data with the correction coefficients.

17. (currently amended) An image processing method according to claim 16, wherein the area discrimination step detects a characteristic amount indicative of a characteristic of a predetermined range neighboring to each of the ~~image~~ brightness data and outputting the discrimination result, and the coefficient calculation step outputs the correction coefficients based on the characteristic ~~amounts~~ amount.

18. (currently amended) An image processing method according to claim 16, wherein the area discrimination step extracts a low frequency component of each of the ~~image~~ brightness data, and the coefficient calculation step produces the correction coefficients in response to the low frequency ~~components~~ component.

19. (currently amended) An image processing method according to claim 16, wherein the area discrimination step includes a quantization step of quantizing the ~~image~~ brightness data, and a step of extracting a low frequency component from each of the ~~image~~ brightness data quantized by the quantization step, and the coefficient calculation step produces the correction coefficients in response to the low frequency ~~components~~ component.

20. (currently amended) An image processing method according to claim 16, wherein the area discrimination step includes an extraction step of extracting a plurality of low frequency components of each of the ~~image~~ brightness data with different frequency bands, and a signal

composition step of producing single composite signals based on the low frequency components, and the coefficient calculation step produces the correction coefficients based on the composite signals.

21. (original) An image processing method according to claim 20, wherein the signal composition step weighted averages the low frequency components to produce the composite signals.

22. (original) An image processing method according to claim 20, wherein the signal composition step weighted adds the low frequency components with weighting coefficients set in advance to produce the composite signals.

23. (currently amended) An image processing method according to claim 16, wherein the area discrimination step extracts a plurality of low frequency components of each of the image brightness data with different frequency bands, and the coefficient calculation step includes a partial coefficient calculation step of producing coefficients for correction from the low frequency components, and a coefficient composition step of producing the correction coefficients based on the coefficients for correction.

24. (original) An image processing method according to claim 23, wherein the coefficient composition step weighted averages the coefficients for correction to produce the correction coefficients.

25. (original) An image processing method according to claim 23, wherein the coefficient composition step weighted adds the coefficients for correction with weighting coefficients set in advance to produce the correction coefficients.

26. (currently amended) An image processing method according to claim 16, wherein the correction step multiplies the pixel values of the ~~image~~ brightness and the color data by the correction coefficients to correct the pixel values of the image data.

27. (currently amended) An image processing method according to claim 16, wherein the number of bits of the ~~image~~ brightness data ~~outputted~~ obtained from the correction step is smaller than the number of bits of the image data ~~inputted~~.

28. (currently amended) An image processing method according to claim 16, wherein the image data are data obtained by sampling a signal, wherein an amplitude modulated color signal is sequentially superposed on-a the brightness signal, with a predetermined frequency.

29. (canceled)

30. (canceled)